

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A ~~computer-readable~~recording medium storing an executable data structure for managing reproduction by a reproduction apparatus of at least video data having multiple reproduction paths recorded on the recording medium ~~by a reproducing device~~, comprising:

one or more management ~~areas~~files~~for for managing reproduction of the video data by the reproducing apparatus~~, the management file storing at least one entry point map associated with each reproduction path, each entry point map for identifying entry points in the video data for the associated reproduction path, the entry point map mapping a data packet address of each entry point to a presentation time stamp of the entry point, the one or more management ~~area~~files being separate from a data ~~area~~file storing the video data,

wherein the entry point map includes path change information for managing changing of reproduction paths by the reproducing apparatus, the path change information having a plurality of fields, each field associated with an~~one of the~~ entry points, and

the path change information includes a field for identifying whether [[a]] changinge in reproduction paths is permitted in relation to the associated entry point and another field for identifying where changinges in reproducing paths ~~at least one of the reproduction paths of video data are~~ is permitted in relation to the associated entry point.

2. (Cancelled)

3. (Currently Amended) The ~~computer-readable~~recording medium of claim 1, wherein the fields for permitting a change in a same associated reproduction path define one or more units of video data.

4. (Currently Amended) The recording ~~computer-readable~~ medium of claim 3, further comprising:

a data ~~area~~file having at least the video data recorded therein, and at least a portion of the video data being multiplexed on a unit of video data basis.

5. (Currently Amended) The recording ~~computer-readable~~ medium of claim 4,

wherein the multiple reproduction paths of video data are different camera angles of video data.

6. (Currently Amended) The recording ~~computer-readable~~ medium of claim 3, wherein each unit of video data starts with an I-picture.

7. (Currently Amended) The recording ~~computer-readable~~ medium of claim 3, wherein each unit of video data starts with a closed group of pictures (GOP).

8-14. (Cancelled)

15. (Currently Amended) The recording ~~computer-readable~~ medium of claim 3, wherein the entry point maps are aligned in time.

16. (Cancelled)

17. (Currently Amended) The recording ~~computer-readable~~ medium of claim 3, wherein if the field indicates that changing reproduction paths is permitted in relation to the associated entry point, an active ~~the another~~ field associated with the entry point associated with an entry point indicates a start position of a data packet of the video data, that changing reproduction paths is permitted before reproducing the entry point having the associated active field.

18. (Currently Amended) A method of recording a data structure for managing reproduction of at least video data having multiple reproduction paths on a recording medium, comprising:

recording at least one entry point map in one or more management ~~area~~files of the recording medium, the entry point map associated with each reproduction path, each entry point map for identifying entry points in the video data for the associated reproduction path, the entry point map mapping a data packet address of each entry point to a presentation time stamp of the entry point, the one or more management ~~area~~files being separate from a data ~~area~~file for storing the video data,

wherein the entry point map includes ~~the~~ path change information having a plurality of fields, each field associated with one of an ~~the~~ entry points, and

the path change information includes a field for identifying whether ~~[[a]]~~ changing in reproduction paths is permitted in relation to the associated entry point, and another field for identifying where ~~changes in reproducing at least one of the reproduction paths of video data are~~ is permitted in relation to the associated entry point.

19. (Currently Amended) A method of reproducing a data structure for managing reproduction of at least video data having multiple reproduction paths recorded on a recording medium, comprising:

reproducing management information from one or more management ~~area~~files of the recording medium, the management information including at least one entry point map associated with each reproduction path, each entry point map for identifying entry points in the video data for the associated reproduction path, the entry point map mapping data packet address of each entry point to a presentation time stamp of the entry point, the one or more management ~~area~~files being separate from a data ~~area~~file for storing video data,

wherein the entry point map includes ~~the~~ path change information having a plurality of fields, each field associated with one of an the entry points, and

~~and~~ the path change information includes a field for identifying whether ~~[[a]]~~ changing in reproduction paths is permitted in relation to the associated entry point, and another field for identifying where ~~changes in reproducing at least one of the reproduction paths of video data are~~ is permitted in relation to the associated entry point.

20. (Currently Amended) An apparatus for recording a data structure for managing reproduction of at least video data having multiple reproduction paths on a recording medium, comprising:

an optical ~~recording device~~pickup configured to record data on the recording medium; and

~~an encoder configured to encode at least multiple reproduction path video data; and~~

a controller operably coupled to the optical ~~recording device~~pickup, configured to control the optical ~~recording device~~pickup to record the ~~encoded video data having multiple reproduction paths video data~~ on the recording medium, the controller

configured to control the optical ~~recording device~~pickup to record at least one entry point map in one or more management ~~area~~files of the recording medium, the entry point map associated with each reproduction path, each entry point map for identifying entry points in the video data for the associated reproduction path, the entry point map mapping a data packet address of each entry point to a presentation time stamp of the entry point, the one or more management ~~area~~files being separate from a data ~~area~~file storing the video data; and

wherein the entry point map includes ~~the~~ path change information having a plurality of fields, each field associated with one of~~an~~ the entry points, and

the path change information includes a field for identifying whether [[a]] ~~change~~in reproduction paths is permitted in relation to the associated entry point, and another field for identifying where ~~changes in reproducing at least one of the reproduction paths of video data are~~ is permitted in relation to the associated entry point.

21. (Currently Amended) An apparatus for reproducing a data structure for managing reproduction of at least video data having multiple reproduction paths recorded on a recording medium, comprising:

an optical ~~reproducing device~~pickup configured to reproduce data recorded on the recording medium;

a controller operably coupled to the optical ~~recording device~~pickup, configured to control the optical ~~reproducing device~~pickup to read entry point map from one or more management ~~area~~files of the recording medium, at least one entry point map associated with each reproduction path, each entry point map for identifying entry points in the video data for the associated reproduction path, the entry point map mapping a data packet address of each entry point to a presentation time stamp of the entry point, the one or more management ~~area~~files being separate from a data ~~area~~file ~~for~~ storing the video data; and

wherein the entry point map includes path change information having a plurality of fields, each field associated with one of~~an~~ the entry points, and

the path change information includes a field for identifying whether [[a]] ~~change~~in reproduction paths is permitted in relation to the associated entry point, and another field for identifying where ~~changing changes in reproducing at least one of the reproduction paths of video data are~~ is permitted in relation to the associated

entry point.

22. (Previously Presented) The method of claim 18, wherein the fields for permitting a change in a same associated reproduction path define one or more units of video data.

23. (Currently Amended) The method of claim 22, wherein at least a portion of the video data is recorded in a data ~~area~~file ~~with~~ being multiplexed on a unit of video data basis.

24. (Currently Amended) The method of claim 23, wherein the multiple reproduction paths of video data are different camera angles of video data.

25. (Previously Presented) The method of claim 19, wherein the fields for permitting a change in a same associated reproduction path define one or more units of video data.

26. (Currently Amended) The method of claim 25, wherein at least a portion of the video data is recorded in a data ~~area~~file ~~with~~ being multiplexed on a unit of video data basis.

27. (Currently Amended) The method of claim 26, wherein the multiple reproduction paths of video data are different camera angles of video data.

28. (Previously Presented) The apparatus of claim 20, wherein the fields for permitting a change in a same associated reproduction path define one or more units of video data.

29. (Currently Amended) The apparatus of claim 20, wherein if the field indicates that changing reproduction paths is permitted in relation to the associated entry point, the another~~an active field associated with the entry point associated with an entry point~~ indicates a start position of a data packet of the video data~~that changing reproduction paths is permitted after reproducing the entry point having the associated active field.~~

30. (Previously Presented) The apparatus of claim 21, wherein the fields for permitting a change in a same associated reproduction path define one or more units of video data.

31. (Currently Amended) The apparatus of claim 21, wherein the another-an active field associated with the entry point~~an entry point~~ indicates a start position of a unit associated with the entry point~~that changing reproduction paths is permitted after reproducing the entry point having the associated active field.~~

32. (Currently Amended) The recording ~~computer-readable-medium~~ of claim 4, wherein the data ~~area~~file stores a plurality of clip files, each clip file associated with each reproduction path, each clip file associated with each entry point map.

33. (Cancelled)

34. (Currently Amended) The recording ~~computer-readable-medium~~ of claim 1, wherein the change of the reproduction path is performed if the change is permitted and a current reproduction path is maintained ~~execution of the change is delayed until a reproduction position reaches a position at which the exiting the current reproduction path~~change is permitted.

35. (Cancelled)

36. (Currently Amended) The method of claim 18, wherein the change of the reproduction path is performed if the change is permitted and a current reproduction path is maintained ~~execution of the change is delayed until a reproduction position reaches a position at which exiting the current reproduction path~~the change is permitted.

37. (Cancelled)

38. (Currently Amended) The method of claim 19, further comprising:
_____performing a~~the~~ change of the reproduction path based on the path

change information if the change is permitted and a current reproduction path is maintained~~execution of the change is delayed~~ until a ~~reproduction position reaches a~~ position at which exiting the change~~current reproduction path~~ is permitted.

39. (Cancelled)

40. (Currently Amended) The apparatus of claim 20, wherein the controller is configured to perform a~~the~~ change of the reproduction path if the change is permitted and a current reproduction path is maintained~~execution of the change is delayed~~ until a ~~reproduction position reaches a~~ position at which exiting the change~~current reproduction path~~ is permitted.

41. (Cancelled)

42. (Currently Amended) The apparatus of claim 21, wherein the controller is configured to perform a~~the~~ change of the reproduction path if the change is permitted and a current reproduction path is maintained~~execution of the change is delayed~~ until a ~~reproduction position reaches a~~ position at which exiting the change~~current reproduction path~~ is permitted.

43. (New) The apparatus of claim 20, further comprising:
an encoder configured to encode at least video data having multiple
reproduction paths,
wherein the controller is configured to control the optical pickup to record the
encoded video data.